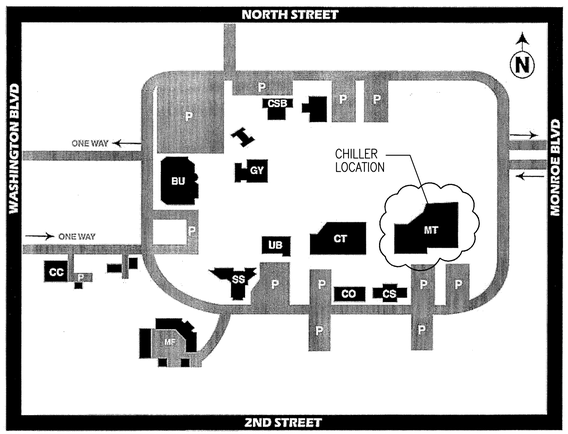
MANUFACTURING TECHNOLOGY BUILDING CHILLER REPLACEMENT

DFCM PROJECT No. 08049240

OGDEN–WEBER APPLIED TECHNOLOGY COLLEGE
200 NORTH WASHINGTON BLVD.
OGDEN, UTAH 84404

MAY 2008



BU- Business Building
CC- Corporate Training Center
CO- Cosmetology
CS- Children's School Buildings
CSB- College Services Building
CT- Construction Technology Building
GY- Gymnasium Building
MF- Maintenance Facility
MT- Manufacturing Technology Building
P- Parking
SS- Student Services Building
UB- Union Building

CAMPUS MAP
SCALE: NONE

DRAWING INDEX

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NO. | REVISIONS | DATE | BY | APPROVED

CHILLER REPLACEMENT
OGDEN-WEBER TECHNOLOGY COLLEGE
COVER SHEET

TITLE: | DATE 06/18/08 | BY | DRAFTING DRAWN | CHECKED 06/18/08
DATE 06/18/08 | BY | ENGINEERING ENGINEERED | APPROVED | SCALE: AS NOTED

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REVISION 0

PROJECT DESCRIPTION

CHILLER
THIS PROJECT CONSISTS OF REMOVING AN EXISTING YORK, AIR-COOLED, RECIPROCAL, ROOFTOP CHILLER AND REPLACING IT WITH A YORK, AIR-COOLED, SCROLL, ROOFTOP CHILLER. THE NEW CHILLER HAS BEEN PER-PURCHASED BY THE OWNER AND WILL BE PROVIDED TO THE CONTRACTOR FOR THIS PROJECT. THE CONTRACTOR WILL HOWEVER TAKE OWNERSHIP RESPONSIBILITY OF THIS CHILLER ONCE A CONTRACT IS SIGNED. THIS RESPONSIBILITY WILL INCLUDE AS A MINIMUM, TRACKING OF SHIPMENT FROM THE YORK FACTORY TO THE JOB SITE, ARRANGING OFFLOADING, CHILLER STORAGE AS NECESSARY, ARRANGING CHILLER FACTORY START UP, AND ANY COORDINATION ISSUES WITH THE CHILLER MANUFACTURER OR THE LOCAL CHILLER REP WHICH IS US AIRCONDITIONING.

CRANE
THE EXISTING CHILLER WEIGHT IS APPROXIMATELY 12,000 LBS. THE NEW CHILLER WEIGHT IS APPROXIMATELY 6,500 LBS. IT IS ANTICIPATED THAT A CRANE SET WILL BE REQUIRED FOR BOTH REMOVAL OF THE OLD CHILLER AND INSTALLATION OF THE NEW CHILLER ONTO THE ROOF. IT IS FURTHER ANTICIPATED THAT THE PARKING LOT DIRECTLY SOUTH OF THE CHILLER LOCATION WILL BE USED FOR THE CRANE SET UP AND STAGING AREA. THIS PARKING LOT IS LOCATED APPROXIMATELY 100 FT SOUTH OF THE EXISTING CHILLER LOCATION. THE CONTRACTOR IS TO FIELD VERIFY WHAT WILL BE REQUIRED FOR ANY CRANE SET BASED ON SITE CONDITIONS.

REMOVAL
REMOVAL OF THE EXISTING CHILLER WILL INCLUDE THE ENTIRE UNIT INCLUDING PROPER REFRIGERANT REMOVAL AS NECESSARY. THE OLD UNIT AND REFRIGERANT WILL BE DISPOSED OF PROPERLY AND COMPLETELY. ASSOCIATED WITH THE REMOVAL OF THE OLD CHILLER WILL BE REMOVAL OF THE EXISTING ROOF CURB AND SOME OF THE EXISTING CHILLED WATER PIPING AND VALVES. ALL OF THE REMOVED PIPING WILL BE LOCATED ON THE EXTERIOR OF THE BUILDING AS INDICATED IN THE DRAWINGS.

PIPING
NEW CHILLED WATER PIPING WILL BE INSTALLED INCLUDING NEW VALVES, STRAINER, FLEX CONNECTIONS, THERMOMETERS, AND PRESSURE GAUGES. THIS NEW PIPING WILL BE LOCATED OUTSIDE OF THE EXISTING MECHANICAL ROOM IN THE OUTSIDE AREA NEAR THE CHILLER. NO PIPING MODIFICATIONS WILL BE REQUIRED INSIDE THE MECHANICAL ROOM OF THE BUILDING.

ROOF CURB
A NEW ROOF CURB WILL BE INSTALLED WITH THE NEW CHILLER. THIS NEW CURB WILL BE ANCHORED TO THE EXISTING CONCRETE DECK WITH EXPANSIONS BOLTS. WATER TIGHT FLASHING WILL BE REQUIRED ALONG WITH BUILT-UP ROOF REPAIRS AS REQUIRED TO INSURE THE ROOF DECK REMAINS WATERTIGHT. ANY ROOF AREA DAMAGED BY THIS PROJECT WILL ALSO BE REPAIRED COMPLETELY TO THE SATISFACTION OF THE OWNER. THE NEW CHILLER WILL BE INSTALLED ON THE CURB WITH SEISMIC SPRING ISOLATORS PROVIDED AS PART OF THE PRE-PURCHASED CHILLER PACKAGE. THE CONTRACTOR WILL HOWEVER BE REQUIRED TO INSTALL THE ISOLATORS ON THE CURB AND ATTACH TO THE CHILLER. THE CONTRACTOR IS TO INSURE THAT THE CURB, THE CURB PAN, AND ANY AND ALL PENETRATIONS OF THE CURB PAN REMAIN WATERTIGHT. CAULK ALL PENETRATIONS LIBERALLY WITH A SILICONE BASE CALK. AS A PROTECTION TO THE ROOF AROUND THE NEW CHILLER, THE CONTRACTOR IS TO PROVIDE AND INSTALL 26 – 20 INCH X 20 INCH FLEXIBLE ROOF PAVERS. PAVERS TO BE AMSTAR, FLEXPLY PAVERS, STYLE C IN GRAY. INSTALL AS PER MANUFACTURERS RECOMMENDATIONS.

GLYCOL
ONCE THE NEW CHILLER IS INSTALLED AND READY FOR OPERATION, THE CHILLED WATER SYSTEM WILL BE REFILLED OF ALL DRAINED WATER/GLYCOL AND FILLED WITH A MINIMUM OF 35% GLYCOL SOLUTION. THE CHILLED WATER SYSTEM IS TO BE TESTED PRIOR TO THE CHILLER REMOVAL TO INSURE A 35% SOLUTION EXISTS. A PRE-REMOVAL TEST REPORT WILL BE PROVIDED TO THE OWNER AND ENGINEER SHOWING THE EXISTING SYSTEM GLYCOL CONCENTRATION. ONCE THE CHILLER IS INSTALLED AND THE CHILLED WATER SYSTEM IS FILLED, A SECOND TEST WILL BE PREFORMED AND A POST-INSTALLATION TEST REPORT WILL BE PROVIDED TO THE OWNER AND ENGINEER TO INSURE THE CHILLED WATER SYSTEM HAS BEEN RESTORED TO A 35% SOLUTION. ALL GLYCOL TESTING WILL BE BY THE CONTRACTOR AND MAY BE WITNESSED BY THE OWNER AND ENGINEER AT THEIR DISCRETION.

ELECTRICAL
THERE ARE TWO 400A, 3P FUSIBLE SWITCHES MOUNTED ON THE NORTH WALL OF THE CHILLER ENCLOSURE. THE EAST SWITCH WILL BE REMOVED AND RETURNED TO THE OWNER. THE WEST SWITCH WILL BE REUSED FOR THE SERVICE TO THE NEW CHILLER AFTER MODIFICATIONS HAVE BEEN MADE AS DESCRIBED IN THE ELECTRICAL DRAWING E-1. EXISTING WIRE OF THE EAST SWITCH WILL BE REMOVED BETWEEN THE SWITCH AND THE BREAKER IN PANEL DPH-1 FOUND ON THE FIRST FLOOR. NEW WIRE WILL BE PULLED THROUGH THE EXISTING CONDUIT FROM PANEL DPH-1 TO THE CHILLER LOCATION ON THE ROOF. A DETAILED DESCRIPTION OF ALL ELECTRICAL MODIFICATIONS CAN BE FOUND ON DRAWING SHEET E-1. THE CONTRACTOR IS TO BECOME FULLY AWARE OF ALL THE ELECTRICAL REQUIREMENTS OF SHEET E-1 AND TO VERIFY ALL SITE CONDITIONS ASSOCIATED WITH THESE REQUIREMENTS.

CONTROLS
ONCE THE CHILLER HAS BEEN INSTALLED, THE EXISTING CONTROLS ARE TO BE REINSTALLED ONTO THE NEW CHILLER AND CONNECTED TO THE EXISTING SIEMENS BUILDING CONTROL SYSTEM. THIS WILL INCLUDE AS A MINIMUM, ENABLE/DISABLE, FAILURE ALARM, RUN STATUS, CHILLED WATER SUPPLY TEMPERATURE, CHILLED WATER RETURN TEMPERATURE, FLOW SWITCH INTERCONNECTION AS REQUIRED FOR THE EXISTING PUMPS FOR START/STOP AND PROOF OF STATUS, AND ANY OTHER NECESSARY CONTROL INTERFACES. NOTE, THE FLOW SWITCH IS PROVIDED AS PART OF THE CHILLER PACKAGE FOR FIELD INSTALLATION BY THE CONTRACTOR. ALL CONTROL ITEMS AND ISSUES ARE TO BE COORDINATED BETWEEN SIEMENS, YORK, AND THE OWNER. ANY ADDITIONAL PROGRAMMING REQUIRED TO ACCOMMODATE THE NEW CHILLER WILL BE INCLUDED AS PART OF THIS PROJECT BY THE CONTRACTOR.

FACTORY START-UP
THE CHILLER IS TO BE STARTED BY A FACTORY AUTHORIZED REPRESENTATIVE ONLY. THIS REPRESENTATIVE WILL FURNISH A COMPLETE START-UP REPORT TO THE OWNER AND THE ENGINEER AFTER START-UP. THIS START-UP IS PART OF THE CHILLER PACKAGE AND THE ASSOCIATED COST IS INCLUDED IN THE CHILLER PACKAGE HOWEVER THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THIS START-UP AND BEING PRESENT AT THE START-UP TO INSURE THE PROPER INSTALLATION OF THE CHILLER AND ALL RELATED ITEMS.

HVAC SPECIFICATIONS

1. ALL MECHANICAL EQUIPMENT, AND PIPING MUST BE SEISMICALLY BRACED IN ACCORDANCE WITH THE LATEST EDITION OF THE UBC, ASHRAE, AND SMACNA. PROVIDE SEISMIC PRODUCTS BY AMBER-BOOTH OR MASON INDUSTRIES.

2. ALL PIPING TO BE STEEL PIPE, ASTM A 53, TYPE E (ELECTRIC-RESISTANCE WELDED), GRADE B, SCHEDULE 40, BLACK STEEL, PLAIN ENDS, WITH WELDED AND FLANGED CONNECTIONS.

3. PIPE INSULATION TO BE 1 INCH OF MINERAL-FIBER INSULATION: GLASS FIBERS BONDED WITH A THERMOSETTING RESIN, PREFORMED PIPE INSULATION COMPLYING WITH ASTM C 547, TYPE 1. INSTALL WITH ALUMINUM JACKET WITH CORRUGATED FINISH, 0.010 INCH THICK AND FACTORY-APPLIED, ALL-PURPOSE, VAPOR-RETARDER JACKET.

4. VALVES TO BE FERROUS-ALLOY BUTTERFLY VALVES, MSS SP-67, TYPE I, FOR TIGHT SHUTOFF, WITH DISC AND LINING SUITABLE FOR POTABLE WATER. FLANGELESS, 150-PSIG CWP RATING, WAFER TYPE WITH ONE OR TWO PIECE STEM, CWP RATING, FERROUS ALLOY, WITH EPDM LINER.

5. FLEXIBLE CONNECTORS TO BE STAINLESS-STEEL BELLOWS WITH WOVEN, FLEXIBLE, BRONZE, WIRE-REINFORCING PROTECTIVE JACKET; 150 PSIG MINIMUM WORKING PRESSURE AND 250 DEG F MAXIMUM OPERATING TEMPERATURE. CONNECTORS SHALL HAVE FLANGED END CONNECTIONS TO MATCH EQUIPMENT CONNECTIONS AND SHALL BE CAPABLE OF 3/4-INCH MISALIGNMENT.

6. INSTALL A STRAINER ON SUPPLY INLET SIDE OF THE CHILLER. INSTALL NPS 3/4 NIPPLE AND BALL VALVE FOR THE BLOWDOWN CONNECTION OF THE STRAINER. INSTALL PORTS FOR PRESSURE AND TEMPERATURE GAGES AT CHILLER INLET AND OUTLET CONNECTIONS.

7. INSTALL DIRECT MOUNTING THERMOMETERS AND ADJUST VERTICAL AND TILTED POSITIONS. PROVIDE THE FOLLOWING TEMPERATURE RANGES FOR THERMOMETERS : 0 TO 100 DEG F, WITH 2-DEGREE SCALE DIVISIONS.

8. INSTALL DIRECT-MOUNTING LIQUID FILLED CASE TYPE PRESSURE GAGES 4-1/2" DIAMETER AT CHILLED WATER INLETS AND OUTLETS OF THE CHILLER. GAGES TO HAVE ACCURACY GRADE A, PLUS OR MINUS ONE PERCENT OF MIDDLE HALF SCALE.

9. PROPERLY LUBRICATE ALL PIECES OF EQUIPMENT BEFORE TURNING THE SYSTEM OVER TO THE OWNER.

10. START-UP SERVICES:
PROVIDE THE SERVICES OF A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO START-UP CHILLER IN ACCORDANCE WITH MANUFACTURER'S WRITTEN START-UP INSTRUCTIONS. RECONNECT AND TEST CONTROLS AND DEMONSTRATE COMPLIANCE WITH REQUIREMENTS. REPLACE DAMAGED OR MALFUNCTIONING CONTROLS AND EQUIPMENT.

HVAC GENERAL NOTES

1. PROVIDE ALL LABOR MATERIALS, AND EQUIPMENT NECESSARY TO CONSTRUCT A COMPLETE, OPERATIONAL CHILLER AS SHOWN ON THESE DRAWINGS, INCLUDING ALL NECESSARY FEES AND PERMITS.

2. THE ENTIRE INSTALLATION SHALL CONFORM TO THE 2006 REQUIREMENTS OF THE MECHANICAL CODE, PLUMBING CODE, BUILDING CODE, AND ALL OTHER APPLICABLE STATE CODES AND REGULATIONS IN EFFECT AT THE DATE OF THE BID.

3. COORDINATE THE INSTALLATION OF ALL EQUIPMENT WITH EXISTING CONDITIONS.

4. THE DRAWINGS SHOW THE GENERAL DESIGN, ARRANGEMENTS AND THE EXTENT OF THE SYSTEM. IT SHALL BE THE WORK OF THE CONTRACTOR TO MAKE SUCH SLIGHT ALTERATIONS AS MAY BE NECESSARY TO MAKE THE SYSTEM COMPLETE AND OPERATIONAL IN ACCORDANCE WITH THE DESIGN INTENT. MAJOR DEVIATIONS SUCH AS CHANGES IN COMPONENT SIZES, WEIGHTS, QUANTITIES, OR MATERIAL REQUIRE PRIOR APPROVAL BY THE CONSULTING ENGINEER.

5. NOT ALL HVAC INFORMATION IS SHOWN ON THE HVAC DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING INFORMATION ON ALL OTHER CONSTRUCTION DOCUMENTS INCLUDING STRUCTURAL AND ELECTRICAL DRAWINGS.

6. THE WORKING DRAWINGS ARE DIAGRAMMATIC. BECAUSE OF THE SMALL SCALE OF THE DRAWINGS, THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW NECESSARY FOR THE COMPLETE INSTALLATION IN THE SPACE PROVIDED. ALL LOCATIONS FOR HVAC EQUIPMENT SHALL BE CHECKED AND COORDINATED WITH THE EXISTING CONDITIONS.

7. ANY PART OF THIS INSTALLATION THAT FAILS, IS UNFIT, OR BECOMES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

8. ALL EQUIPMENT SHALL PROVIDE THE SCHEDULED PERFORMANCE AT THE SITE ALTITUDE.

9. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL FITTINGS, TRANSITIONS, DAMPERS, VALVES, AND OTHER DEVICES OR ACCESSORIES REQUIRED FOR A COMPLETE, WORKABLE INSTALLATION.

10. THE CONTRACTOR IS RESPONSIBLE FOR HVAC EQUIPMENT CHECK-IN, SAFEKEEPING, AND DAMAGE.

11. TWO OPERATING AND MAINTENANCE MANUALS SHALL BE PROVIDED IN HARD BACK LOOSE LEAF BINDERS. MANUALS SHALL CONTAIN PRODUCT CUT SHEETS AND OPERATING AND MAINTENANCE INSTRUCTIONS ON ALL EQUIPMENT, ACCESSORIES, VALVES, ETC. PROVIDED FOR THE PROJECT.

12. UPON COMPLETION OF THE WORK, REMOVE ALL SURPLUS MATERIALS AND RUBBISH. MAKE ALL REQUIRED PATCHING AND REPAIRS OF OTHER TRADES' WORK DAMAGED BY THIS CONTRACTOR, AND LEAVE THE PREMISES IN A CLEAN, ORDERLY CONDITION.

14. THE CONTRACTOR SHALL OPERATE THE SYSTEM AND DEMONSTRATE ALL ASPECTS TO THE ENGINEER AND/OR OWNER, TO PROVE ITS OPERATION. ALL FILTERS USED DURING CONSTRUCTION SHALL BE REPLACED PRIOR TO THE TEST RUN PERIOD.

13. THE CONTRACTOR SHALL GUARANTEE THE CHILLER SYSTEM ASSOCIATED WITH THIS PROJECT FOR A PERIOD OF ONE YEAR FROM THE DATE OF THE SUBSTANTIAL COMPLETION.

14. THE CONTRACTOR SHALL, DURING CONSTRUCTION, MAINTAIN A SET OF AS-BUILT RED-LINED RECORD DRAWINGS AT THE PROJECT SITE. ALL CHANGES IN LAYOUT, ROUTING, EQUIPMENT, COMPONENTS, AND ACCESSORIES SHALL BE RECORDED. THESE RED-LINES SHALL BE GIVEN TO THE ENGINEER AFTER THE FINAL INSPECTION.

ELECTRICAL GENERAL NOTES

1. VERIFY ALL EQUIPMENT DIMENSIONS AND LOCATIONS BEFORE BEGINNING ROUGH-IN. CONSULT ALL APPLICABLE CONTRACT DRAWINGS AND SHOP DRAWINGS TO INSURE NEC CODE CLEARANCES REQUIRED AROUND ALL ELECTRICAL EQUIPMENT.

2. CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENTS, ETC.) OF EQUIPMENT FURNISHED UNDER OTHER DIVISIONS WITH APPROVED SHOP DRAWINGS BEFORE BEGINNING ROUGH-IN.

3. THE ELECTRICAL CONTRACTOR SHALL NOTIFY AND COOPERATE WITH THE MECHANICAL CONTRACTOR SO THAT NO PIPING, DUCTS, OR EQUIPMENT FOREIGN TO THE OPERATION OF THE ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED IN, ENTER OR PASS THRU ELECTRICAL ROOM OR SPACES; OR ABOVE OR BELOW ELECTRICAL EQUIPMENT IN OTHER AREAS.

4. ALL PENETRATIONS OF FIRE RATED FLOORS, WALLS, AND CEILINGS SHALL BE SEALED WITH APPROVED MATERIAL TO MAINTAIN FIRE RATING OF SURFACE PENETRATED.

5. UNLESS OTHERWISE INDICATED, ALL CONDUIT, J-BOXES, SWITCHES, DEVICES, ETC. TO BE SURFACE MOUNTED ON EXPOSED CONCRETE WALLS OR CEILINGS.

6. COORDINATE WITH ARCHITECT FOR DEMOLITION/NEW CONSTRUCTION PHASING REQUIREMENTS.

7. SIZE GROUND AND CONDUITS PER "CONDUIT CONDUCTOR SCHEDULE". GREEN GROUND WIRES SHALL BE RUN IN ALL CONDUITS.

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CHILLER REPLACEMENT
OGDEN-WEBER TECHNOLOGY COLLEGE

MECHANICAL AND ELECTRICAL NOTES

	BY	DATE
DRAFTING	DRAWN	06/18/08
	CHECKED	06/18/08
ENGINEERING	ENGINEERED	06/18/08
	APPROVED	06/18/08

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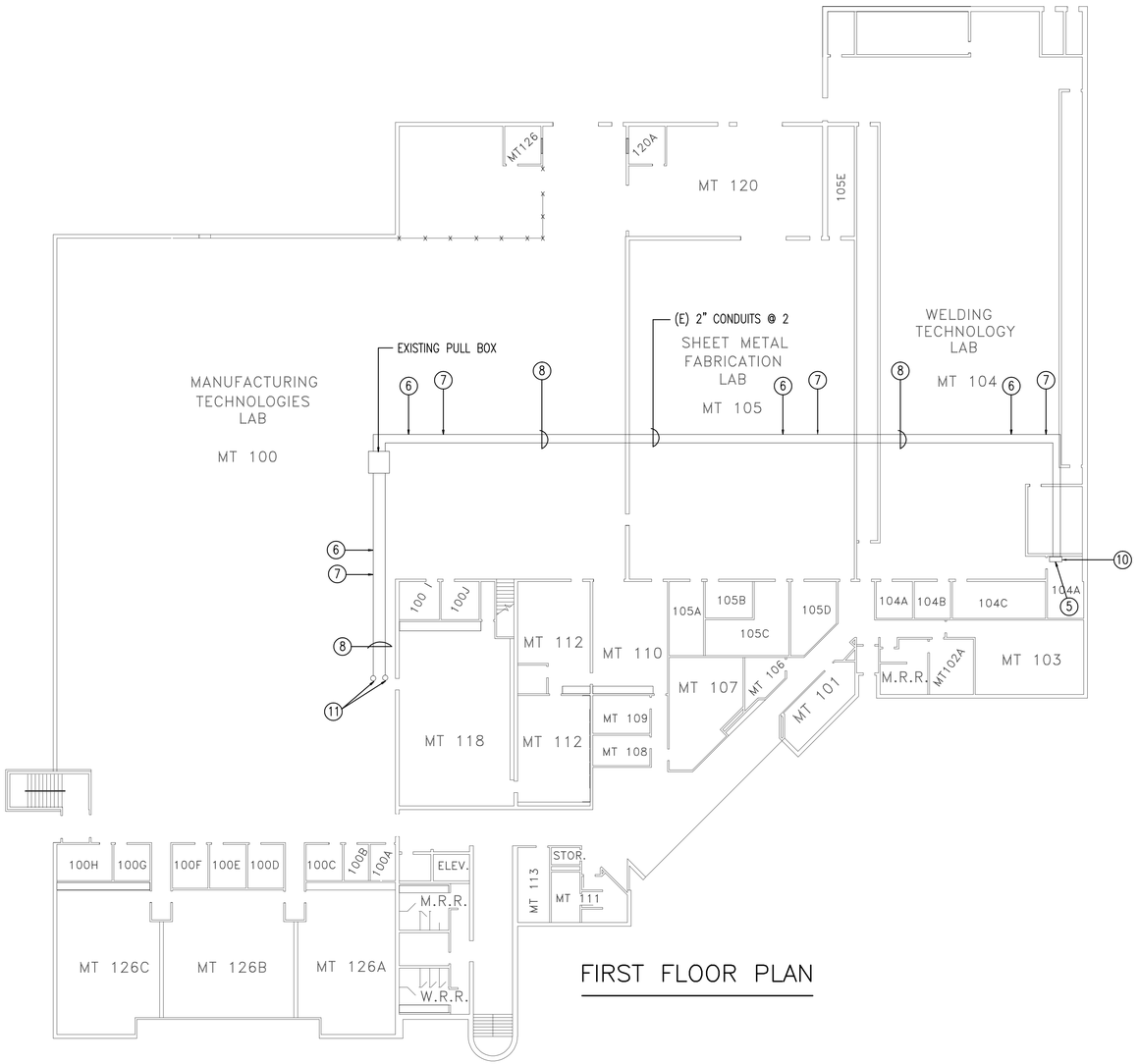
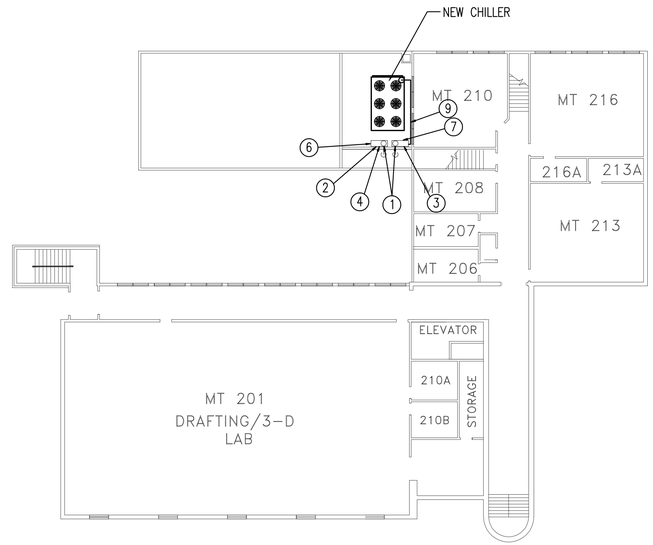


FIRST FLOOR PLAN



SECOND FLOOR PLAN

Keyed Notes

1. THERE ARE TWO 400A 3P FUSIBLE SWITCHES MOUNTED ON THE NORTH EXTERIOR WALL OF PENTHOUSE NEXT TO EXISTING CHILLER.
2. REMOVE EAST SWITCH AND RETURN TO OWNER.
3. RE-USE EXISTING WEST SWITCH IN PLACE. INSTALL DOUBLE LUGS ON LINE SIDE OF SWITCH TO RECEIVE DUAL #4/0 CABLES. ONE SET OF #4/0 CABLES IS ALREADY IN PLACE. REPLACE 225A WITH 300A DUAL ELEMENT FUSES.
4. INSTALL PULL BOX (MINIMUM 12" x 12" x 12") ADJACENT TO EAST SIDE OF WEST SWITCH COVERING THE CABLE ENTRANCE TO THE EAST SWITCH.
5. REPLACE EXISTING 225 & 250A BREAKERS IN PANEL DPH-1 IN DISTRIBUTION ROOM ON FIRST FLOOR WITH 300A 3P BREAKER & BLANK COVER PLATE. SQ D 600V MOLDED CASE BREAKER WITH DOUBLE LUGS FOR #4/0 COPPER CABLE. RETURN 225 & 250A BREAKERS TO OWNER.
6. PULL OUT AND RETURN TO OWNER 3 – 250 KCMIL THHN/THWN & #2 COPPER CABLE (FROM EAST SWITCH TO PANEL DPH-1).
7. PULL IN 3 – #4/0 THHN/THWN COPPER CABLE & #2 COPPER GND WIRE FROM WEST SWITCH, THROUGH PULL BOX, TO 300A BREAKER IN PANEL DPH-1. USE EXISTING 2" CONDUIT BETWEEN EAST SWITCH LOCATION AND PANEL DPH-1.
8. THIS EXERCISE SHALL PROVIDE A PARALLEL #4/0 FEEDER BETWEEN THE NEW 300A CIRCUIT BREAKER IN PANEL DPH-1 AND THE WEST SWITCH.
9. INSTALL 3"C, 3 – 350 KCMIL & #2 GND BETWEEN WEST SWITCH AND SINGLE CONNECTION POINT ON NEW CHILLER. COPPER LUGS AND GROUND LUG SHALL BE FURNISHED ON NEW CHILLER AT SINGLE CONNECTION POINT. CONTROL POWER TRANSFORMER AND MAINTENANCE RECEPTACLE SHALL BE FURNISHED WITH CHILLER.
10. EXISTING CONDUIT RISES APPROXIMATELY 30 FEET AT THIS LOCATION.
11. CONDUITS RISE TO EXISTING SWITCHES AT THIS LOCATION.

General Notes

1. CONTRACTOR TO VISIT THE SITE AND BECOME THOROUGHLY FAMILIAR WITH PROJECT BEFORE BIDDING.

PLAN NORTH

ELECTRICAL FLOOR PLANS

SCALE: 1/16"=1'-0"

CHILLER REPLACEMENT
OGDEN-WEBER TECHNOLOGY COLLEGE
ELECTRICAL FLOOR PLANS

NO.	REVISIONS	DATE	BY	APPROVED
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	BY	DATE
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APPROVED		06/18/08

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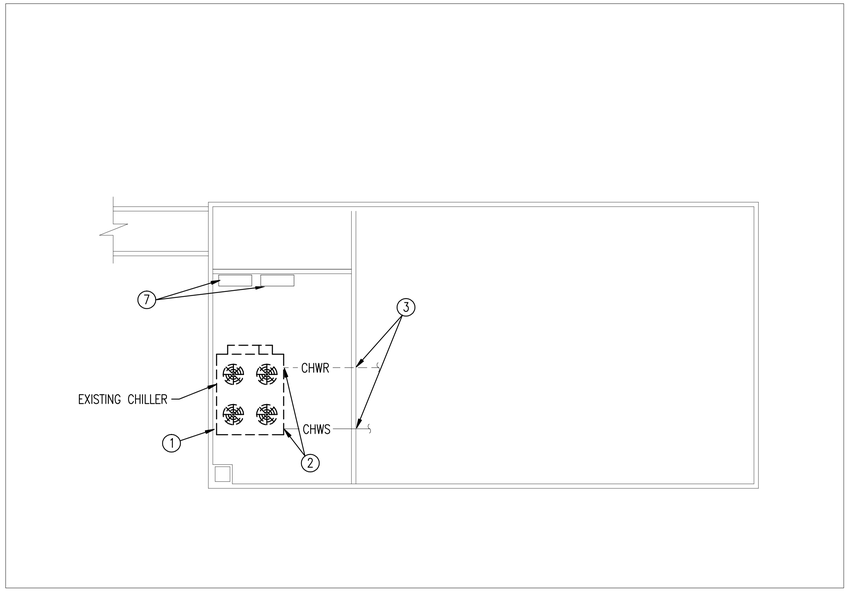
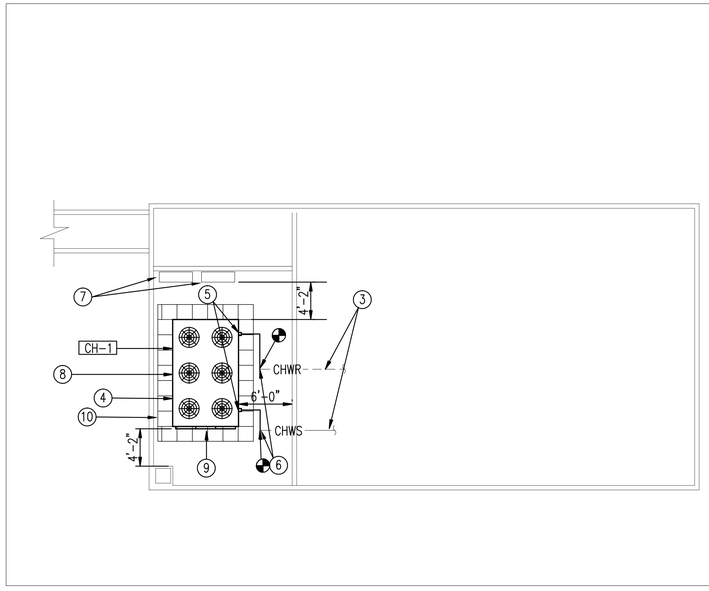


PLAN NORTH

EXISTING/DEMOLITION MECHANICAL PLAN

SCALE: 1/8"=1'-0"



PLAN NORTH

NEW MECHANICAL PLAN

SCALE: 1/8"=1'-0"

Keyed Notes

1. REMOVE EXISTING CHILLER AND EXISTING CURB AND PROPERLY DISPOSE OF ALL PARTS.
2. DISCONNECT EXISTING CHILLED WATER PIPING AT THIS APPROXIMATE LOCATION. FIELD VERIFY LOCATION.
3. EXISTING CHILLED WATER PIPING TO REMAIN. CONNECT TO NEW CHILLER AS SHOWN ON NEW MECHANICAL PLAN.
4. INSTALL NEW CHILLER AS PER MANUFACTURER RECOMMENDATIONS. MAINTAIN REQUIRED CLEARANCES.
5. INSTALL NEW CHILLED WATER PIPING TO CHILLER CONNECTIONS.
6. CONNECT NEW CHILLED WATER PIPING TO EXISTING CHILLED WATER PIPING AT THIS APPROXIMATE LOCATION. FIELD VERIFY LOCATION.
7. EXISTING ELECTRICAL CONTROL PANEL TO REMAIN. REFER TO ELECTRICAL DRAWING FOR WORK REGARDING THIS EQUIPMENT.
8. INSTALL NEW CURB SEE DETAIL 2/M-2.
9. RECONNECT CHILLER CONTROLS TO EXISTING SIEMENS BUILDING CONTROL SYSTEM. COORDINATE WITH BOTH YORK AND SIEMENS CONTROLS TO INSURE ALL EXISTING POINTS ARE RECONNECTED AND PROGRAMMED.
10. AS A PROTECTION OF THE ROOF AROUND THE NEW CHILLER, THE CONTRACTOR IS TO PROVIDE AND INSTALL 26 – 20"x20" FLEXIBLE ROOF PAVERS.

AIR COOLED WATER CHILLER SCHEDULE (OWNER FURNISHED, CONTRACTOR INSTALLED)

SYMBOL	MANUFACTURER AND MODEL NUMBER	NOMINAL TONS (1)	CHILLER DATA (1)					COMPRESSOR ELECTRICAL DATA (1)						OPERATING WEIGHT LBS	REFRIG.	ACCESSORIES AND REMARKS
			GPM	EWT °F	LWT °F	PD/FT	O/A AMBIENT	KW	VOLT	PHASE	HZ	MCA	EER			
CH-1	YORK YLAA0120ZE46	111.8	283.7	54	44	15.5	95	137.9	460	3	60	255.2	9.1	7001.0	R410A	OWNER FURNISHED EQUIPMENT CONTRACTOR TO INSTALL

(1) OWNER PROVIDED, CONTRACTOR INSTALLED CHILLER.
(2) BASED ON 35% ETHYLENE GLYCOL SOLUTION AT 4500 FT ASL JOBSITE ELEVATION.

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CHILLER REPLACEMENT
OGDEN-WEBER TECHNOLOGY COLLEGE
MECHANICAL PLANS AND SCHEDULES

TITLE:

	DRAFTING	DATE	BY
DRAWN	ERK	06/18/08	
CHECKED	CMY	06/18/08	

	ENGINEERING	DATE	BY
ENGINEERED		06/18/08	
APPROVED		06/18/08	

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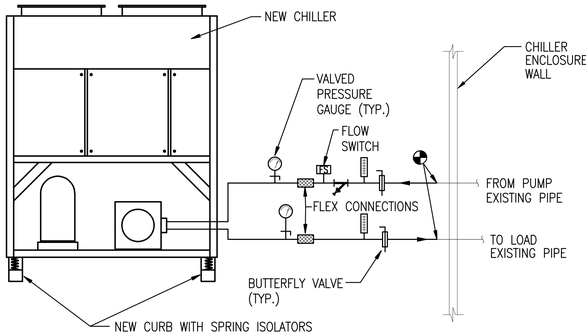
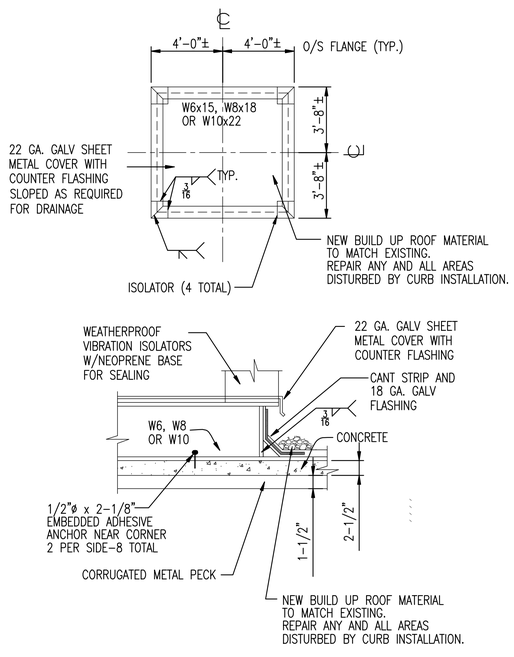


AIR COOLED CHILLER DETAIL

SCALE: NONE

1 / M-2



CHILLER CURB DETAIL

SCALE: NONE

2 / M-2

LEGEND OF SYMBOLS AND ABBREVIATIONS

NOTE: NOT ALL SYMBOLS MAY BE USED

MECHANICAL SYMBOLS

PS	PRESSURE SWITCH
FS	FLOW SWITCH
S	TEMPERATURE SENSOR
T	THERMOSTAT
TN	NIGHT THERMOSTAT
	ROOF DRAIN (RD)
	ROOF DRAIN OVERFLOW (RDO)
	FLOOR DRAIN (FD)
VTR	VENT THROUGH ROOF (VTR)
	PRESSURE GAUGE W/ NEEDLE VALVE
	THERMOMETER
	AUTOMATIC AIR VENT
	MANUAL AIR VENT
	FLOW ARROW
	DIRECTION OF PIPE SLOPE (DOWN)
	SLEEVE
	PIPE GUIDES
xxxxxxxx	PIPE TO BE REMOVED
	EXPANSION LOOP
	FLEXIBLE CONNECTION

PIPING SYMBOLS

CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY

VALVES

	STRAINER
	STRAINER WITH BLOW-OFF VALVE
	STEAM TRAP
	BALL VALVE
	CALIBRATED BALANCING VALVE
	CHECK VALVE
S	SOLENOD VALVE
	THREE WAY
	GATE VALVE
	GLOBE VALVE
	CONTROL VALVE - 2 WAY
	CONTROL VALVE - 3 WAY
	BUTTERFLY VALVE
	RELIEF VALVE
	3-WAY RELIEF VALVE
	PRESSURE REDUCING VALVE
	PRESSURE REGULATING VALVE (PRV)
	FLOW METER
	NATURAL GAS MODULATING CONTROL VALVE
	NATURAL GAS PILOT OPERATED CONTROL VALVE
	GAS VALVE
	COMBINATION BALANCING & SHUT OFF VALVE
	GAS PRESSURE REGULATOR
	NEEDLE VALVE
	STEP ACTUATED VALVE
	FUSED LINK VALVE
	DIFFERENTIAL PRESSURE REGULATOR

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AMPS	AMPERES
APD	AIR PRESSURE DROP
ASL	ABOVE SEA LEVEL
BD	BACKDRAFT DAMPER
BHP	BRAKE HORSEPOWER
BTUH	BRITISH THERMAL UNITS PER HOUR
CMU	CONCRETE MASONRY UNIT
CFM	CUBIC FEET PER MINUTE
DB	DRY BULB TEMPERATURE
DEG OR °	DEGREE
DIA OR ø	DIAMETER
DG	DOOR GRILLE
DN	DOWN
EA	EXHAUST AIR
EG	EXHAUST AIR GRILLE
EAR	EXHAUST AIR REGISTER
EAT	ENTERING AIR TEMPERATURE
ESP	EXTERNAL STATIC PRESSURE
FA	FIRE ALARM
FPM	FEET PER MINUTE
FT	FOOT
GA	GAGE OR GAUGE
HP	HORSEPOWER
HZ	HERTZ
IN	INCH
KW	KILOWATTS
LAT	LEAVING AIR TEMPERATURE
MAX	MAXIMUM
MBH	BRITISH THERMAL UNITS PER HOUR (THOUSANDS)
MIN	MINIMUM
OA	OUTSIDE AIR
PD	PRESSURE DROP
PH	PHASE
LBS	POUNDS
PSIG	POUNDS PER SQUARE INCH GAGE
PSI	POUNDS PER SQUARE INCH
RA	RETURN AIR
RPM	REVOLUTIONS PER MINUTE
RH	RELATIVE HUMIDITY
SA	SUPPLY AIR
SF	SUPPLY FAN
SP	STATIC PRESSURE

HORZ	HORIZONTAL
WT	WEIGHT
PROP	PROPELLER
DS	DOWNSPOUT
FR	FIRE RISER
CI	CAST IRON
(E) OR EX	EXISTING
FDV	FIRE DEPARTMENT VALVE
VFD	VARIABLE FREQUENCY DRIVE
(R)	RELOCATE OR RELOCATED
FDC	FIRE DEPARTMENT CONNECTION
F/SD	FIRE/SMOKE DAMPER
FLA	FULL LOAD AMPS
LRA	LOCKED ROTOR AMPS
EER	EQUIPMENT EFFICIENCY RATING
OCC	OCCUPIED
UNOCC	UNOCCUPIED
ASL	ABOVE SEA LEVEL
STD	STANDARD
PWR	POWER
RD	ROOF DRAIN
RDO	ROOF DRAIN OVERFLOW
HB	HOSE BIBB
EL.	ELEVATION
TYP.	TYPICAL
@	AT
W/	WITH
MAX.	MAXIMUM
DN	DOWN
℄	CENTER LINE
PL	PLATE
TOS	TOP OF STEEL
MECH.	MECHANICAL
EQUIP.	EQUIPMENT
SQFT	SQUARE FEET
TEMP	TEMPERATURE
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
V.A.C.	VACUUM
V	VOLTAGE
WB	WET BULB TEMPERATURE
WC	WATER COLUMN

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CHILLER REPLACEMENT
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MECHANICAL LEGEND AND DETAILS

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